

## **ABSTRACT**

The present invention provides for an apparatus for converting an organic liquor into a mixture of hydrocarbons and carbon solids, comprising: a heater for heating the organic liquor, thereby producing a mixture of liquid and vaporized oil; a reactor for converting the mixture of liquid and vaporized oil into carbon solids, and a mixture of hydrocarbons and gases; a first cooler for accepting the carbon solids; and a second cooler for accepting the mixture of hydrocarbons and gases. The apparatus of the present invention finds application in the processing of waste and low-value products to produce useful materials in reliable purities and compositions, at acceptable cost, without producing malodorous emissions, and with high energy efficiency. In particular, the organic liquor derives from feedstocks such as offal, animal manures, municipal sewage sludge, tires, and plastics, that otherwise have little commercial value, and are thereby converted into useful materials including gas, oil, specialty chemicals, and carbon solids.